

To the Federal Communications Commission:

I encourage the FCC to strictly regulate the wireless industry with much greater care for people's health, and to include consideration of the documented **non-thermal** effects of RF radiation which have been largely ignored.

The high levels of radio frequency radiation people are now being exposed to has already caused serious illness and disability to thousands of people. This has been well documented globally. We are no longer in the "precautionary principle" phase. Harm is being done. I am very concerned about everyone's health, but especially that of children, as they are the most vulnerable to RF radiation.. As the rate of chronic illness and cancer rises among babies and children, it should be unthinkable to expose them to more and more damaging RF radiation at home, at school and everywhere they go.

We have lost our freedom of choice. The extreme exposure to radiofrequencies has become unavoidable. I do not choose to use any wireless technology, and I pay a monthly fee to opt out of having a smart meter on my house, yet I am subject to constant radiation from cell phone towers and surrounding smart meter and other wireless technology. Children have even less freedom, as they are dependent on their parents and guardians to reject wireless technology at home and to advocate for better regulation.

Several years ago good friend of mine became seriously ill because of RF exposure, and she has not recovered. The only hope of recovery is to be able to avoid further exposures, but this is now impossible as cell phone towers are going up in previously remote areas and wi fi is everywhere. I learn of more and more people in my friend's predicament. It is not acceptable to sacrifice people's health, to devastate their lives, under the pressure of a profit-driven industry.

I include below excerpts from just one of the international reports available about harmful effect of RF radiation, including **non-thermal** effects which are most important to consider and yet have been ignored by the wi fi industry and regulating agencies. The excerpts include information about effects on wildlife, including bees, which humans need and depend on.

The following are excerpts from an article published in **Biology and Medicine**, Volume 4, Issue 4, Pages 202–216, (eISSN: 09748369) entitled, "Impacts of radio-frequency electromagnetic field (RF-EMF) from cell phone towers and wireless devices on biosystem and ecosystem: a review," by S. Sivani and D. Sudarsanam, Department of Advanced Zoology and Biotechnology, Loyola College, Chennai, Tamil Nadu, India, published 6th January 2013. The entire article can be viewed at www.biolmedonline.com or www.omicsonline.com.

"In 2008, the Austrian Department of Health found a higher risk of cancer among people living within 200 m of a mobile phone base station and that cancer risk rose with increasing exposure, reaching 8.5 times the norm for people most exposed.

In the Bioinitiative Report, a document prepared by 14 international experts in a nine-

month project, in which over 2000 scientific studies were reviewed, Sage (2007) came to a conclusion that there may be no lower limit that may be safe, and there was a need for biologically-based limits, and children are at most risk.

Urban electro-magnetic contamination (electrosmog) 900 and 1800 MHz pulsed waves interfere in the nervous system of living beings (Hyland, 2000). Growing amounts of published research show adverse effects on both humans and wildlife far below a thermal threshold, usually referred to as “non-thermal effects”, especially under conditions of long-term, low-level exposure (Levitt and Lai, 2010).

According to the Seletun Scientific Statement (2011), low-intensity (non-thermal) bioeffects and adverse health effects are demonstrated at levels significantly below existing exposure standards. ICNIRP/WHO and IEEE/FCC public safety limits are inadequate and obsolete with respect to prolonged, low-intensity exposures (New International EMF Alliance, 2011). New, biologically-based public exposure standards are urgently needed to protect public health world-wide. EMR exposures should be reduced now rather than waiting for proof of harm before acting (Fragopoulou et al., 2010). [My emphasis]

According to Levitt (2010), trees, algae, and other vegetation may also be affected by RF-EMF. Some studies have found both growth stimulation and dieback. The browning of tree tops is often observed near cell towers....

In an observational study, it was found that the output of most fruit-bearing trees reduced drastically from 100% to 5% after 2.5 years of cell tower installation in a farm facing four cell towers in Gurgaon–Delhi Toll Naka (Kumar and Kumar, 2009).

Colony collapse disorder (CCD) was observed in beehives exposed to 900 MHz for 10 minutes, with sudden disappearance of a hive’s inhabitants, leaving only queen, eggs, and a few immature workers behind. (Sharma and Kumar, 2010).

EMFs from telecommunication infrastructure interfere with bees’ biological clocks....

In a two-month study in Spain in common frog tadpoles on the effects of mobile phone mast located at a distance of 140 m noted low coordination of movements, an asynchronous growth, resulting in...a high mortality (90%) in exposed group. For the unexposed group in Faraday cage, the coordination of movements was normal, the development was synchronous, and a mortality of 4.2% was obtained (Balmori, 2009).

A study by the Centre for Environment and Vocational Studies of Punjab University noted that embryos of 50 eggs of house sparrows were damaged after being exposed to mobile tower radiation for 5–30 minutes (MOEF, 2010). Observed changes included reproductive and coordination problems and aggressiveness. Tower-emitted microwave radiation affected bird breeding, nesting, and roosting in Valladolid, Spain (US Fish & Wildlife Service, 2009).

House sparrows, white storks, rock doves, magpies, collared doves exhibited nest and site abandonment, plumage deterioration (lack of shine, beardless rachis, etc.), locomotion problems, and even death among some birds. No symptoms were observed prior to construction of the cell phone towers.

In a survey of two berry farms in similar habitats in Western Massachusetts (Doyon, 2008), one with no cell phone towers, there were abundant signs of wildlife, migrating and resident birds, bats, small and large mammals, and insects including bees and the other farm with a cell phone tower located adjacent to the berry patch, virtually no signs of wildlife, tracks, scat, or feathers were noted. The berries on bushes were uneaten by birds and insects and the berries that fell to the ground were uneaten by animals.

In a study on cows and calves on the effects of exposure from mobile phone base stations, it was noted that 32% of calves developed nuclear cataracts, 3.6% severely. Oxidative stress was increased in the eyes with cataracts, and there was an association between oxidative stress and the distance to the nearest mast.

The most affected of the species are bees, birds, and bats and without these pollinators visiting flowers, 33% of fruits and vegetables would not exist.... (Kevan and Phillips, 2001)."

These are just a few examples among many. Thank you for the opportunity to comment.

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